

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

POWER INTEGRATIONS, INC.,

Plaintiff,

V.

C.A. No. 08-309-JJF-LPS

FAIRCHILD SEMICONDUCTOR  
INTERNATIONAL, INC., FAIRCHILD  
SEMICONDUCTOR CORPORATION,  
and SYSTEM GENERAL CORPORATION,

Defendants.

## DEFENDANT AND COUNTERCLAIMANTS' OPENING CLAIM CONSTRUCTION BRIEF

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## I. INTRODUCTION

Under Federal Circuit law, claim construction has become increasingly standardized and predictable. Critically, all patents are reviewed under the same rules. Fairchild has consistently applied the rules to both the Power Integrations (“PI”) and Fairchild claim terms. In contrast, PI determined a construction where its claims may be valid and infringed and Fairchild’s claims could be invalid or not infringed and then manipulated the evidence towards this outcome.

For the Fairchild patents, PI attempts either to import limitations into the claims to avoid infringement or to construe the claims broadly enough to read directly on the prior art. A particularly egregious example involves PI’s proposed construction of certain claims to include secondary-side-control to explicitly cover the prior art. PI manipulates the language of other claims to make it appear they require certain sampling where the plain meaning of the claims requires no such limitation. Elsewhere, PI improperly attempts to import a particular *method* into an *apparatus* claim. PI also seeks to import no less than four additional limitations into the simple phrase “first reference signal is varied in response to the change of the second signal.” Finally, PI seeks to restrict the term “multi-sampling” to require sampling multiple times within a given switching cycle when the patent clearly shows sampling across multiple cycles.

For its own patents, PI ignores recent, highly pertinent evidence developed in the pending re-exams and blindly relies on prior constructions that predate this evidence. Specifically, PI relies on constructions of “frequency jittering” and “frequency variation signal” expressly rejected by the PTO on reexamination, and that PI conceded were not correct by amending and canceling the claims. In contrast, PI retreats from its previous proposed construction of “digital to analog” converter, even though there is no new evidence relevant to that phrase, in order to target a group of products. Finally, PI seeks to take advantage of a typographical error to avoid the impact of its decision to draft a claim in means-plus-function format.

PI’s litigation-inspired constructions ignore – indeed, contradict – the intrinsic evidence and, accordingly, must be rejected. As established long ago, claims are not a “nose of clay” allowing a party to argue different constructions for validity, infringement, or the case at hand.

## II. LEGAL STANDARDS

### A. The Court Should Construe The Claims In Light Of The Intrinsic Evidence.

A claim term is to be given the ordinary and customary meaning that would be attributed to it by one of ordinary skill in the art. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). To determine how one of ordinary skill in the art would have understood the claims, a Court should consider the patent's claims, its specification, and its prosecution history. *Id.* at 1314. The Court may also consider extrinsic evidence, such as dictionaries and expert testimony, but such extrinsic evidence is viewed "in general as less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.* at 1318.

### B. Reexamination Proceeding Files Are Intrinsic Evidence.

In construing claims, courts must review the patent's prosecution history, which is "the complete record of all proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." *Vitronics Corp. v. Conceptronic*, 90 F.3d 1576, 1582-83 (Fed. Cir. 1996). Reexamination proceedings are part of a patent's prosecution history and should be considered by a court as intrinsic evidence. *See On Demand Machine Corp. v. Ingram Indus.*, 442 F.3d 1331, 1338-39 (Fed. Cir. 2006) (patentee's and examiner's statements in reexam were considered in construing claim); *E.I. DuPont & Co. v. Phillips Pet. Co.*, 849 F.2d 1430 (Fed. Cir. 1988) (statements made during reexam are "relevant prosecution history when interpreting claims"); *Custom Accessories v. Jeffrey-Allan Indus.*, 807 F.2d 955, 961 (Fed. Cir. 1986) (an examiner's decision on reexam is evidence the court must consider in determining patent validity); *Gould v. Control Laser Corp.*, 705 F.2d 1340, 1342 (Fed. Cir. 1983) (one purpose of reexam is to "facilitate trial of that issue by providing the district court with the expert view of the PTO").

### C. Courts Must Interpret Claims In Light Of The Specification Without Improperly Importing Limitations.

In construing claims, courts must strike a balance between interpreting claims in light of the specification while at the same time avoiding improperly importing limitations from the specification. "That balance turns on how the specification characterizes *the claimed invention*



... [W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims.” *Alloc, Inc. v. ITC*, 342 F.3d 1361, 1370 (Fed. Cir. 2003) (emphasis added). If the patentee describes particular attributes as part of the “invention,” it operates to limit the scope of claims that might otherwise be susceptible to a broader interpretation. *Id.* (limiting scope of claim where patent “teaches that the invention as a whole, not merely a preferred embodiment” requires limitation); *Genzyme Corp. v. Transkaryotic Therapies, Inc.*, 346 F.3d 1094, 1099 (Fed. Cir. 2003) (limiting scope of claim to specific technique, because patent “explicitly states that the ‘present invention,’ not merely a preferred embodiment, ‘involves [the specific technique].’”).

Statements about “the present invention” thus are particularly strong indicators that the inventor limited the scope of his claims. *C. R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 864 (Fed. Cir. 2004) (“[t]he present invention is an implantable prosthesis” and “[t]he implant includes a pleated surface” acted to limit scope of claims to cover only implants that were pleated). Similarly, statements describing a particular attribute as the advantage or distinction of an invention over the prior art is strong evidence that the inventor restricted his invention based on that attribute. *See, e.g., On Demand*, 442 F.3d at 1340; *Alloc*, 342 F.3d at 1369-1370.

When the invention is not restricted to a particular embodiment, however, it is improper to read limitations from the embodiment into the claims. *See Phillips*, 415 F.3d at 1323 (acknowledging “the danger of reading limitations from the specification into the claim”); *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 808 (Fed. Cir. 2007) (“limitations from the specification are not to be read into the claims.”). This is true even if it is the sole embodiment. *SunRace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302 (Fed. Cir. 2003).

**D. It Is Improper For PI To Seek To Construe The Claims To Read On The Accused Devices Or To Avoid The Prior Art.**

It is only appropriate to consider validity and infringement *after* the claims have been construed in light of the intrinsic evidence. “Determining infringement requires two steps. First, the claim must be properly construed to determine its scope and meaning. Second, the claim as

properly construed must be compared to the accused device or process.” *Boss Control v. Bombardier*, 410 F.3d 1372, 1376 (Fed. Cir. 2005). The Federal Circuit’s skeptical view of extrinsic evidence is, in part, due to the fact that litigation inspired materials often are an attempt to manipulate the claims based on the prior art or accused products. *Philips*, 415 F.3d at 1318.

### **III. THE FAIRCHILD PATENTS**

#### **A. The Technology**

United States Patent Nos. 7,259,972, 7,352,595 and 7,061,780 (the “Fairchild patents”, Exs. A-C, respectively) relate to primary-side-control power converters and primary-side control/regulator circuitry for power converters. Prior art power converters were widely used to provide regulated output voltage and current. Power converters usually include a transformer to isolate the input terminals on the primary side of the transformer from the output terminals on the secondary side. Most power converters have a switch to control the transfer of power from the input terminals to the output terminals. Ex. A, ‘972 Pat., 1:15-24.<sup>1</sup> In the prior power converters, “a controller controls the switch based on a feedback voltage signal from an optical-coupler coupled with an output voltage of the power converter.” *Id.* at 1:25-27. These earlier power converters “also required a secondary-side regulator to regulate output voltage and current at the secondary-side of the power converter.” *Id.* at 1:27-30. “A disadvantage of these prior power converters is that they required an optical-coupler and secondary-side regulator, thereby increasing the size and costs for the power converters.” *Id.* at 1:30-33.

Like the prior art, the power converters and controllers disclosed in the Fairchild patents include a controller and a switch. *See* Exs. A-C, FIG. 1. The Fairchild patents overcame the disadvantages of the prior art using feedback signals associated with the primary-side of the controller to control output voltage and current. The primary-side feedback signals eliminated the optical-coupler and secondary-side regulator, reducing the size and cost of the converters:

***By using feedback signals associated with the voltage control loop and current control loop, a power converter can control the output voltage and the output***

---

<sup>1</sup> The ‘595 and ‘780 Patents contain similar disclosures of the prior art.

**current at the primary-side without the need of an optical-coupler or a secondary-side regulator.** For example, one feedback signal is derived from an auxiliary voltage associated with an auxiliary winding of a transformer at a primary-side, and another feedback signal is derived from a sensed current passing through the switch. An optical-coupler is therefore not needed to generate a feedback voltage signal.

Ex. A, '972 Pat., 2:42-51 (emphasis added); *see also* Ex. B, '595 Pat., 1:33-36, 1:18-20;

Ex. C, '780 Pat., 1:20-24; Ex. A-C, Figure 1.

The switching signals of the power converter disclosed in the '972 Patent are also made to hop from frequency to frequency ("frequency hopping") according to a digital pattern, which enables the switch to turn on or off according to a digital pattern.

In other examples, the controller can generate a switching signal and allow the frequency of the switching signal to hop from frequency to frequency ("frequency hopping") according to a digital pattern, e.g., 1000100101 ... N. This pattern can be programmable, adjustable, and repeat itself. In certain examples, the pattern can be a fixed or variable length pattern. ***In this manner, the switch can turn on or off according to a digital pattern,*** e.g., the switching frequency can vary non-linearly, in order to reduce EMI and its effects in a power converter.

Ex. A, '972 Pat., 2:52-61 (emphasis added).

The '595 patent further provides that a first feedback signal is generated using a first reference signal that is varied in response to variation of a second signal in order to improve load regulation. Ex. B, '595 Pat., 1:57-61, 4:35-42.

## **B. U.S. Patent No. 7,259,972**

1. **'972 Patent, Claim 1: "a controller to generate the switching signal and to control the switching signal in response to a first feedback signal associated with a voltage control loop and a second feedback signal associated with a current control loop"**

| Fairchild's Construction  | PI's Construction  |
|---|--|
| "Control circuitry that generates a switching signal and controls the switching signal using feedback signals associated with voltage and current control loops to control the output voltage and the output current at the primary-side without the need of an optical-coupler or a secondary-side regulator." | "a controller to generate the switching signal and to control the switching signal in response to a first feedback signal derived by measuring a signal representative of an output voltage of the power converter, and a second feedback signal, distinct from the first feedback signal, derived by measuring a signal representative of a current in the switch." |

The phrase "a controller to generate the switching signal and to control the switching signal in response to a first feedback signal associated with a voltage control loop and a second

feedback signal associated with a current control loop” should be interpreted in view of the specification, which repeatedly and consistently describes the invention as a primary-side-controlled power converter. The complete phrase should be construed to require control circuitry that generates a switching signal and controls that signal using feedback signals associated with voltage and current control loops located on the primary-side of the transformer, thus eliminating the need for an optical-coupler or secondary-side regulator.

The specification makes clear, in unambiguous language, that the invention as a whole is directed to a primary-side-control power converter and that providing regulation on the primary-side is an essential aspect of the invention. Where the specification teaches that “the invention” as a whole, as opposed to a single embodiment, requires a particular limitation, that description defines the proper scope of the claims. *Alloc*, 342 F.3d at 1369-70. “[W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims.” *Id.* at 1370.

The Federal Circuit decision in *Alloc* is particularly instructive. The patents-in-suit in *Alloc* pertained to flooring products. *Id.* at 1364. The issue was whether the claims required a space between locking grooves on adjacent floor panels (referred to as “play”), when the claims at issue did not specifically recite such a requirement. *Id.* at 1367. The Federal Circuit concluded that the specification in that case “teaches that the invention as a whole, not merely a preferred embodiment, provides for play in the positioning of floor panels.” *Id.* at 1369. Specifically, the *Alloc* Court found that the patent not only repeatedly described “the invention” as including “play,” but critically also criticized prior art floor systems without play. *Id.* at 1369-1370. Accordingly, the *Alloc* Court held that the claims included a “play” limitation. *Id.* at 1367,1370.

The ‘972 patent repeatedly describes the patented “invention” as a primary-side-control power converter. For example, the patent is titled “***Primary-Side-Control*** Power Converter Using Frequency Hopping and Voltage and Current Control Loops” (emph. added). “The present invention relates generally to power converters and, ***more particularly, to a primary-***

*side-control power converter* having a switching controller using frequency hopping and voltage and current loops.” Ex. A, ‘972 Pat., 1:9-12 (emph. added).

The patent never suggests that the invention includes secondary-side control. Rather, the primary-side-control power converter of the patent is repeatedly distinguished from prior art requiring an optical-coupler or other secondary-side regulation. The patent explains:

In prior power converters, a controller controls the switch based on a feedback voltage signal from an optical-coupler coupled with an output voltage of the power converter. These prior power converters also required a secondary-side regulator to regulate the output voltage and current at the secondary-side of the power converter. A disadvantage of these prior power converters is that they required an optical-coupler and secondary-side regulator, thereby increasing the size and costs of the power converter.

*Id.*, 1:24-33. The patent overcomes these disadvantages and reduces size and cost by instead using primary-side feedback signals to control the output of the power converter:

***By using feedback signals associated with the voltage control loop and current control loop, a power converter can control the output voltage and the output current at the primary-side without the need of an optical-coupler or a secondary-side regulator.*** For example, one feedback signal is derived from an auxiliary voltage associated with an auxiliary winding of a transformer at a primary-side, and another feedback signal is derived from a sensed current passing through the switch. ***An optical-coupler is therefore not needed to generate a feedback voltage signal.***

*Id.*, 2:42-51 (emphasis added), see also 3:32-35. The fact that the patent distinguishes the prior art because it included secondary-side regulation demonstrates that the invention is restricted to primary-side-control. See *Alloc*, 342 F.3d at 1369-70; *SciMed Life Sys. v. Advanced Cardiovascular Sys.* 242 F.3d 1337, 1343-44 (Fed. Cir. 2001).<sup>2</sup>

Throughout the remainder of the specification, the invention is referred to as a primary-side-control power converter. The specification notes that Figure 1 “illustrates one example of a schematic diagram of a *primary-side-control* power converter having a switching controller.” Ex. A, ‘972 Pat., 1:65-67 (emph. added). Referring to Figure 1, switching controller 70 is located on the primary side of the transformer. Figure 3, which illustrates switching controller

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<sup>2</sup> Interpreting the claim to read on the distinguished prior art is also wrong because it could result in invalidating the claim. *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984) (“The starting point is the rule that patent claims should be construed liberally to uphold the patent's validity rather than to destroy the inventor's right to protect the substance of his invention . . .”)

70, shows that it comprises both the voltage and current control loops. Thus, the illustrated embodiment shows the voltage and current control loops providing feedback signals for the controller located on the primary-side of the transformer. Near the end, the patent affirms: “[t]hus, a **primary-side-control power converter** having a switching controller using frequency hopping and voltage and current control loops has been described.” *Id.*, 15:9-11 (emph. added).

From the very beginning description of the “Field” of the invention, to the last paragraph before the claims are presented, the patent describes the invention as a primary-side-control power converter. In other words, “the invention as a whole, not merely a preferred embodiment” requires regulation on the primary-side of the power converter as opposed to secondary-side regulation. *See Alloc*, 342 F.3d at 1369-70.

The prosecution history confirms that the claimed invention is a primary-side-control power converter. *Alloc*, 342 F.3d at 1371 (holding that “the prosecution history of this patent family confirms the description in the specification of each patent, namely, that play is a key feature of the claimed invention” even though not recited in the claims). Specifically, the Examiner initially rejected claim 1 of the ‘972 patent noting that the prior art included “a controller [] to generate the switching signal in response to a first feedback signal associated with a voltage control loop [] and a second feedback signal associated with a current control loop [] **in the primary-side of the transformer.**” Ex. D, (‘972 Pros. Hist.) at 5-7 (emphasis added). Even though the rejected claim 1 did not include an express “primary-side” limitation, the Examiner nonetheless regarded it as part of the claim, demonstrating that the Examiner understood the invention was restricted to primary-side-control.

PI may attempt to argue that the doctrine of claim differentiation somehow undermines Fairchild’s construction of claim 1. In contrast to *SunRace*, 336 F.3d at 1302, and the other “claim differentiation” cases, however, the doctrine has no bearing here. Although claims 22 and 32 of the ‘972 patent include a “primary-side” limitation, there are significant differences between those claims and claim 1. Specifically, claim 22 requires input and output terminals and a transformer not required by claim 1. Claim 32 requires a transformer and a sense device,

neither of which are required by claim 1. Accordingly, this is not a case where “the only meaningful difference” between the claims is the primary-side limitation. *See id.* at 1303.

PI also seeks to add a requirement that the second feedback signal is “distinct” from the first feedback signal. Such language merely adds unnecessary ambiguity as to what is meant by “distinct.” Moreover, whether or not particular signals satisfy the claim language is an issue for infringement analysis and not a claim construction issue.

In view of the specification and the prosecution history, the court should construe the “controller” phrase of claim 1 to mean “control circuitry that generates a switching signal and controls the switching signal using feedback signals associated with voltage and current control loops to control the output voltage and the output current *at the primary-side* without the need of an optical-coupler or a secondary-side regulator.”

**2. ‘972 Patent, Claim 15: “controlling a switching signal to regulate the connection of the electrical power to output terminals in response to a first feedback signal associated with a voltage control loop and a second feedback signal associated with a current control loop”**

| Fairchild ‘s Construction  | PI’s Construction  |
|--|--|
| “Controlling a switching signal using feedback signals associated with voltage and current control loops to control the output voltage and the output current at the primary-side without the need of an optical-coupler or a secondary-side regulator.” | “controlling a switching signal to regulate the connection of the electrical power to output terminals in response to a first feedback signal derived by measuring a signal representative of an output voltage of the power converter, and a second feedback signal, distinct from the first feedback signal, derived by measuring a signal representative of a current in the switch.” |

Claim 15 contains the phrase “controlling a switching signal to regulate the connection of the electrical power to output terminals in response to a first feedback signal associated with a voltage control loop and a second feedback signal associated with a current control loop....” This language is very similar to the “controller” phrase of claim 1, except that claim 15 is directed at a method for regulating power as opposed to an apparatus as in claim 1.<sup>3</sup> For the reasons set forth in Section III.B.1, this phrase should be limited to primary-side regulation.

<sup>3</sup> It is improper to construe a method claim as identical to an apparatus claim as PI proposes. Such claims are governed by different statutory classes. 35 U.S.C. §101.

3. **‘972 Patent, Claim 6: “generates the first feedback signal by *sampling a voltage from the auxiliary winding of the transformer and a discharge time*”**

| Fairchild ‘s Construction   | PI’s Construction  |
|---|--|
| “The controller generates the first feedback signal by sampling a voltage from the auxiliary winding of the transformer when the transformer is discharging.” | “the first feedback signal must be generated by sampling both a voltage signal and a discharge time of the transformer.” |

PI misleadingly extracts words from claim 6 to make it appear that the claims require “sampling... a discharge time.” PI’s manipulation is clear when the extracted language is read in context. The relevant language of claim 6 is “generates the first feedback signal by sampling a voltage from the auxiliary winding of the transformer and a discharge time of the transformer,” which requires sampling a voltage. It does not, as PI urges, require sampling a discharge time.

In the context of the claims and the specification, the entire phrase should be construed as “the controller generates the first feedback signal by sampling a voltage from the auxiliary winding of the transformer when the transformer is discharging.”<sup>4</sup> This is supported by the specification, which describes how the auxiliary voltage is sampled during the discharge time of the transformer (*i.e.*, when the transformer is discharging). The patent explains how a voltage (“ $V_{AUX}$ ”) is generated in the auxiliary winding of the transformer as power flows through the transformer:

When the switching signal  $V_{PWM}$  is off or at a logic low, the electrical energy or power stored in the transformer 10 is delivered to its secondary-side and to an output of the power converter 100 via a diode rectifier 40. As electrical energy or power is delivered to the secondary-side, a secondary-side switching current  $I_S$  is generated in the power converter 100.... ***As electrical energy or power flows through the transformer 10, a voltage  $V_{AUX}$  is generated at the auxiliary winding  $N_A$  of the transformer 10....***

Ex. A, ‘972 Pat., 3:20-4:12 (emph. added). When the switching signal  $V_{PWM}$  of the power converter is off, electrical energy stored in the transformer is delivered from the primary side to the secondary side. This is known as “discharging” the transformer. Declaration of Gu-Yeon Wei In Support of Defendants’ Opening Claim Construction Brief (“Wei Decl.”), ¶¶ 5-6. The time during which the transformer discharges is known as the “discharge time” of the

<sup>4</sup> Other “discharge time” limitations also require “sampling during the discharge time of the transformer.”



transformer.<sup>5</sup> Ex. A, '972 Pat., 3:52-55; Wei Decl. ¶ 6. Thus, as the transformer discharges, a voltage  $V_{AUX}$  is generated at the auxiliary winding. Ex. A, '972 Pat., 3:56-60, Wei Decl. ¶ 7.

The specification describes how  $V_{AUX}$  is sampled when the transformer is discharging:

The voltage waveform detector [150] performs a multiply sampling of the voltage  $V_{AUX}$ . This voltage is sampled and measured instantly before the secondary-side switching current  $I_S$  is discharged to zero.

Ex. A, '972 Pat., 7:48-51, Wei Decl. ¶¶ 7-8.  $V_{AUX}$  is sampled *before* the secondary-side switching current is discharged completely to zero, which entails that the voltage is sampled *while* the secondary-side switching current is discharging. Wei Decl. ¶ 8. The discharge time of the secondary-side switching current is the same as the discharge time of the transformer. Ex. A, '972 Pat., 3:52-55. Thus,  $V_{AUX}$  is sampled when the transformer is discharging. Wei Decl. ¶ 8.

In a more detailed example, the specification explicitly describes how two sample signals  $V_{SP1}$  and  $V_{SP2}$  may be used to alternately sample  $V_{AUX}$  while the transformer is discharging:

In this example, the discharge-time signal  $S_{DS}$  is enabled when the switching signal  $V_{PWM}$  is disabled.... Additionally, the first sample signal  $V_{SP1}$  and  $V_{SP2}$  can be alternately generated during an enabled period of the discharged-time signal  $S_{DS}$ .... ***The first sample signal  $V_{SP1}$  and the second sample signal  $V_{SP2}$  can be used for alternately sampling the voltage signal  $V_{AUX}$  via the detection terminal DET and the divider.***

Ex. A, '972 Pat., 8:49-9:30 (emphasis added).  $V_{SP1}$  and  $V_{SP2}$  are generated during “the enable period of the discharge-time signal.” *Id.* at 9:13-15. The “discharge-time signal” represents the discharge time of the transformer.<sup>6</sup> *Id.* at 9:57-59, 5:6-8, 3:52-55. Because  $V_{SP1}$  and  $V_{SP2}$  are generated during the time the transformer is discharging,  $V_{AUX}$ , which is sampled using those signals, is likewise sampled when the transformer is discharging. Wei Decl. ¶¶ 9-11.

PI's reading of the claims to require “sampling” of a “discharge time” is not supported by the specification. “Sampling” appears in the specification *only* in connection with sampling a

<sup>5</sup> Discharge time  $T_{DS}$  “refers to the discharge time for the transformer 10” or “the discharge-time for the secondary-side switching current  $I_S$ .” Ex. A, '972 Pat., 3:52-55. The specification distinguishes the discharge time  $T_{DS}$  from the discharge time signal  $S_{DS}$ , stating that  $S_{DS}$  is a signal that “represents the discharge-time  $T_{DS}$  of the secondary-switching current  $I_S$ .” *Id.*, 5:6-8.

<sup>6</sup> The discharge-time signal is enabled when the switching signal is disabled. Ex. A, '972 Pat., 8:54-55. Because the transformer discharges when the switch is disabled (*id.* at 3:35-38), the discharge-time signal is enabled when the transformer is discharging. Wei Decl. ¶ 10.

“voltage” or “voltage signal.” *See* Ex. A, ‘972 Patent at 5:5-6 (“sampling of the voltage  $V_{DET}$ ”), 7:34-35 (“sampling of the detection voltage  $V_{DET}$ ”), 7:48-49 (“sampling of a voltage  $V_{AUX}$ ”), 9:22-23 (“sampling the voltage signal  $V_{AUX}$ ”), 13:49-50 (“allow a proper multiply sampling for the sampling voltage signal  $V_{AUX}$ ”). The patent never refers to “sampling” either a “discharge time” by itself, or “a voltage and a discharge time” together.

PI’s interpretation of the claim to require “sampling . . . a discharge time” does not make sense. The word “sample” only has meaning with respect to waveforms, such as the voltage waveforms disclosed in the patent. One of ordinary skill in the art thus would not understand the claims to require “sampling . . . a discharge time.” In the context of the patent disclosure, one of ordinary skill in the art would understand the claim language to mean sampling the auxiliary voltage during the discharge time of the transformer. Wei Decl. ¶ 12.

**C. U.S. Patent No. 7,352,595**

**1. ‘595 Patent, Claims 16, 22, 27: “a second circuit, producing a second signal”**

| Fairchild ‘s Construction           | PI’s Construction  |
|-------------------------------------|--|
| “Circuitry for producing a signal.” | “A second circuit producing a second signal by integrating a current signal with a timing signal that represents the discharge time of the transformer.” |

No construction is necessary for “a second circuit, producing a second signal.” PI seeks to construe this phrase to import a method for producing the signal, specifically “by integrating a current signal with a timing signal that represents the discharge time of the transformer.” This is not supported by the specification and violates the doctrine of claim differentiation. The claims provide detail regarding the manner in which the second circuit produces the second signal and it is improper to read in any further limitation. *See, e.g., Phillips*, 415 F.3d at 1323 (acknowledging “the danger of reading limitations from the specification into the claim”); *Acumed LLC*, 483 F.3d at 808 (“... limitations from the specification are not to be read into the claims.”).

To the extent the phrase is construed, it should be given its plain meaning of “circuitry for producing a signal.” The patent discloses a “second circuit” that generates a current signal by

detecting or measuring a current-sense signal. Ex. B, '595 Pat., 4:26-28 ("A current signal  $V_W$  is generated by a second circuit 300 by measuring the current-sense signal  $V_{CS}$ ."); *id.*, 5:19-20 ("The current-sense signal  $V_{CS}$  is detected by the second circuit 300; and the current signal  $V_W$  is generated"). This supports Fairchild's construction as the claims themselves require that the "second circuit" generate a signal based on a current signal. *See id.*, Claim 16 (signal produced "in response to a current signal" that "represents a primary-side switching current of the transformer"); Claims 22, 27 (signal produced "by measuring a current signal" that is "correlated to the output current of the switching regulator"). Given this additional claim language, the "second circuit" recited in the claims is precisely what is disclosed in the patent.

The "second circuit" described in the patent does not include an integrator and does not integrate the signal. *See* Ex. B, '595 Pat., 8:48-63, Figure 6. PI would have the Court construe "second circuit" in a manner that would not read on the disclosed embodiment, which "would 'rarely if ever [be] correct and would require highly persuasive evidentiary support.'" *See Chimie v. PPG Indus.*, 402 F.3d 1371, 1377 (Fed. Cir. 2005); *Vitronics*, 90 F.3d at 1583; *Affymetrix v. Illumina*, 446 F.Supp.2d 277, 286-87 (D. Del. 2006). There is absolutely no support for construing "second circuit" to require a particular method of producing the claimed signal. Indeed, it would be particularly improper to inject a "method" limitation into apparatus claims. *Cf. Paragon Solutions, LLC v. Timex Corp.*, 566 F.3d 1075, 1090 (Fed. Cir. 2009) ("The problem with construing 'displaying real-time data' as used in the claims of the '759 patent to preclude 'contextually meaningful delay' is that such a construction injects a use limitation into a claim written in structural terms. '[A]pparatus claims cover what a device is, not what a device does.'") (citation omitted); *Baldwin Graphic Sys. v. Siebert*, 512 F.3d 1338, 1344 (Fed. Cir. 2008) ("Courts must generally take care to avoid reading process limitations into an apparatus claim.").

To overcome the heavy presumption that claim terms are given their plain and ordinary meaning, PI must demonstrate that the inventor restricted his invention to producing signals using integration. *SunRace*, 336 F.3d at 1302; *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). PI cannot do so. PI's flawed attempt to import an "integration"

requirement is very similar to the situation in the *SunRace* case.<sup>7</sup> The district court in *SunRace* held that claims reciting a “shift actuator” required use of a “cam mechanism,” even though that term was not recited in the claims. *SunRace*, 336 F.3d at 1299-1302. Despite the fact that each of the disclosed embodiments used a “cam mechanism,” the Federal Circuit disagreed with the district court’s finding that the cam was “truly integral to the invention” because:

[N]othing in the written description indicates that the invention is exclusively directed toward cams or suggests that systems not employing cams are outside the scope of the invention. Thus, while it is clear that the patentee was primarily focused on an embodiment of his invention using a cam, nothing in the patent limits the claims to that embodiment.

*SunRace*, 336 F.3d at 1305. The *SunRace* Court further relied on the critical fact that the inventor did not distinguish the prior art based on the use of a cam mechanism. *Id.*

Similarly, the ‘595 patent does not suggest that the disclosed invention is exclusively directed towards producing signals using integration, nor that such integration is integral to the disclosed invention. To the contrary, the patent explicitly discloses signals produced without the use of integration. Ex. B, ‘595 Pat., 4:26-28 (“A current signal  $V_w$  is generated by a second circuit 300 by measuring the current-sense signal  $V_{cs}$ .”); 5:19-20 (“The current-sense signal  $V_{cs}$  is detected by the second circuit 300; and the current signal  $V_w$  is generated”). Nor did the inventor distinguish his invention from the prior art on the ground that the prior art did not use integration. Compare *SunRace*, 336 F.3d at 1305 (specification did not limit claims where feature was not used to distinguish the prior art) with *SciMed*, 242 F.3d at 1343-44 (specification limited claims where feature was used to distinguish prior art).

The doctrine of claim differentiation further undermines PI’s attempt to import an “integration” requirement. “When a patent claim ‘does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement’ .... There is a rebuttable presumption that different claims are of different scope.” *Amgen Inc. v. Hoechst Marion Roussel*, 314 F.3d 1313, 1326 (Fed. Cir. 2003).

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<sup>7</sup> The *SunRace* case was distinguished in the *Alloc* case discussed above where the Federal Circuit held that the “play” limitation was essential to the invention. *Alloc*, 342 F.3d at 1369-70.

This presumption is “especially strong when the limitation in dispute is the only meaningful difference” between the claims. *SunRace*, 336 F.3d at 1303. In the instant case, claim 9 expressly requires “a second circuit, producing a second signal by integrating a current signal with the timing signal” and that the “timing signal represents a discharge time of the transformer.” Ex. B, ‘595 Pat., 13:13-16. The only meaningful difference between claims 9 and 16 is the addition of the “integrating” requirement and measurement of a timing signal for use in the integration. *Compare id.*, 13:1-23 with 14:15-35. If claim 16 is interpreted to require that the second signal is produced “by integrating a current signal with a timing signal that represents the discharge time of the transformer” as PI urges, it will be identical to claim 9 and therefore redundant. This demonstrates that the “integration” limitation should not be imported into claim 16. *See SunRace*, 336 F.3d at 1303 (limitation added by dependent claim should not be read into independent claim because it would render dependent claim redundant). Because identical terms used in different claims should be given the same meaning, the “second circuit” limitation of claims 22 and 27 should likewise not require “integration.” *See, e.g., Phillips*, 415 F.3d at 1314 (“Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.”); *Wilson Sporting Goods v. Hillerich & Bradsby*, 442 F.3d 1322, 1328 (Fed. Cir. 2006) (“Under this court’s case law, the same terms appearing in different claims in the same patent... should have the same meaning ‘unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims.’”) (internal citation omitted).

**2. ‘595 Patent, Claim 17: “first reference signal is varied in response to the change of the second signal”**

| Fairchild ‘s Construction  | PI’s Construction   |
|--|---|
| “The reference signal changes in response to a change in the second signal.” | “The analog value of the first reference signal is increased in response to the increase of the analog value of the second signal.” |

It is not necessary to construe “first reference signal is varied in response to the change of the second signal.” PI seeks to construe this phrase to import four extraneous limitations into

claim 17, specifically, that (1) an *analog value* of the reference signal (2) *increases* in response to an (3) *increase* in (4) an *analog value* of the second signal. PI cannot show that the patent intended to impart novel meaning to the phrase and thus will be unable to overcome the “heavy presumption” that it should be given its ordinary meaning. *Sunrace*, 336 F.3d at 1302 (“We have repeatedly stated that claim terms must be given their ordinary and accustomed meaning unless the patent expresses an intention to impart novel meaning to claim terms.”)

If the phrase is construed, it should be given its plain and ordinary meaning of “the reference signal changes in response to a change in the second signal.” This is supported by the specification which discloses that a reference signal  $V_{REF}$  may be adjusted “in accordance with a reference signal  $V_{REF1}$  and a second signal  $V_I$ .” Ex. B, ‘595 Pat., 4:35-42.

The Court should reject PI’s attempt to limit claim 17 based on an embodiment where “the first reference signal is increased in response to the increase of the second signal,” (Ex. B, ‘595 Pat., 1:59-61). PI cannot overcome the heavy presumption of ordinary meaning simply by pointing to a disclosed embodiment:

Our case law makes clear that while an accused infringer may overcome the “heavy presumption” [of ordinary meaning] and narrow a claim term’s ordinary meaning, [] he cannot do so simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history. An applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention. Whether an invention is fairly claimed more broadly than the “preferred embodiment” in the specification is a question specific to the content of the specification, the context in which the embodiment is described, the prosecution history, and if appropriate the prior art.

*SunRace*, 336 F.3d at 1305-1306 (internal quotations and citations omitted). Here, immediately following the paragraph in which PI’s example is found, the inventor stated “[i]t is to be understood that both the foregoing general descriptions and the following detailed descriptions are exemplary.” *Id.* at 2:3-5. This demonstrates that the descriptions are examples and not intended to provide novel meanings for claim terms or to restrict the scope of the claims. *See e.g.*, *SunRace*, 336 F.3d at 1302.

The patent does not suggest that the invention is exclusively directed towards the use of “analog values” of signals or that “increasing” the reference signal in response to an “increase”

in the second signal is integral to the invention. Wei Decl. ¶ 13. Nor did the patent distinguish the prior art on the basis of such features. *See SunRace*, 336 F.3d at 1305. There is also nothing to suggest that the claims could not be practiced using digital signals, by varying the reference signal in some manner other than by “increasing” it, or by varying the reference signal in response to a decrease or some other change in the second signal. Wei Decl. ¶ 13-14. One of ordinary skill would understand the phrase “first reference signal is varied in response to the change of the second signal” to mean that the reference signal changes in response to a change in the second signal. Wei Decl. ¶ 15. They would not understand the phrase to be limited to analog values of signals, or to require that the signals change in a particular manner. *Id.*

**D. U.S. Patent No. 7,061,780**

**1. ‘780 Patent, Claims 1 and 13: “multi-sampling . . . during an off-time of said switching signal”**

| <b>Fairchild ‘s Construction</b>  | <b>PI’s Construction</b>   |
|---|--|
| “sampling the voltage signal across multiple switching cycles when the switching signal is off” | “sampling two or more times during the off-time of a single switching cycle” |

No construction is required for the phrase “multi-sampling . . . during an off-time of said switching signal.” PI seeks to construe this phrase in order to restrict the claim to require multi-sampling signals during a *single* switching cycle. The “switching signal” is a continuous signal with many periods of off-time. The off-time will occur during some portion of each of multiple cycles. The plain and ordinary meaning is that the voltage is sampled multiple times across these switching cycles, during the periods of off-time. The specification of the ‘780 patent describes sampling the claimed voltage signal at least once in each of the switching cycles. Accordingly, the plain and ordinary meaning is consistent with the specification. If the claim is construed, it should be given its plain meaning of “sampling the voltage signal across multiple switching cycles when the switching signal is off.”

The patentee did not act as his own lexicographer to provide a unique definition for “multi-sampling” contrary to its ordinary meaning. Instead, based on the specification, one of

ordinary skill would have understood that “sampling” refers to looking at a voltage waveform at a moment in time (e.g., the off-time) and that “multi” simply refers to doing this multiple times. Wei Decl. ¶ 17. Nothing more is meant by the term. Specifically, the ‘780 patent describes a sampling operation that takes place in the voltage-waveform detector wherein the voltage  $V_{AUX}$  is sampled while the transformer is discharging. The value of  $V_{AUX}$  is held so that it can be used for a comparison to determine when  $V_{AUX}$  begins to drop. Wei Decl. ¶ 18. One of ordinary skill would have understood the specification to describe the taking of multiple samples (i.e., multi-sampling) of  $V_{AUX}$  – at least once for each switching cycle across multiple cycles – in order to determine when  $V_{AUX}$  begins to drop in each cycle. Wei Decl. ¶ 18. One of ordinary skill in the art thus would have understood that multi-sampling refers to sampling a voltage across multiple switching cycles. Wei Decl. ¶ 17-18.

Nothing in the written description suggests that the “invention” of the ‘780 patent is restricted to “multi-sampling” the voltage during the same off-time of “a single switching cycle” as PI contends. Nor did the patent distinguish the prior art on the basis of such a requirement. *See SunRace*, 336 F.3d at 1305. While PI cites to specific preferred embodiments in the specification where  $V_{AUX}$  is sampled multiple times in a given cycle, it is also sampled across multiple cycles in those examples. *See* Ex. C, ‘780 Pat., Figure 2, 3:13-4:42. Accordingly, the examples suggest neither that the invention is exclusively limited to requiring multi-sampling within a given cycle nor that multi-sampling across multiple switching cycles is outside the scope of the invention. *See Sunrace*, 336 F.3d at 1305. Rather, the examples require sampling across multiple switching cycles and thus supports Fairchild’s construction. In such a situation the plain meaning of the claim language must prevail.

#### **IV. THE POWER INTEGRATIONS PATENTS.**

##### **A. The Technology**

The parties have asked the Court to construe terms from PI’s ‘851 and ‘876 patents. Exs. E and F. Both patents describe and claim circuits that vary the frequency of the oscillator in a pulse width modulated power supply. The earlier ‘851 patent broadly claims a “frequency



variation circuit”, while the later ‘876 patent more narrowly concerns a digital implementation. While both patents describe how frequency variation can be used to reduce electromagnetic interference caused by the power supply, neither patent claims such a result.

**B. U.S. Patent No. 6,249,876**

**1. ‘876 Patent, Claim 1 and 21: "Frequency Jittering"**

“Frequency jittering” appears only in the preamble of claims 1 and 21. Thus, “a preliminary question exists as to whether [it] is a claim limitation.” *Seachange Int’l, Inc. v. C-Cor Inc.*, 413 F.3d 1361, 1375 (Fed. Cir. 2005). In its original claim construction, the Court concluded that the preamble was a limitation. Since then, however, additional prosecution history during reexamination has emerged. In light of this new intrinsic evidence, one of ordinary skill in the art would understand that the preamble is not a limitation. Wei Decl. ¶ 19.

**a. During reexamination, the Patent Office expressly determined that the preamble is not a limitation.**

After the claim construction in *Fairchild I*, the Patent Office began to reexamine the patentability of claims of the ‘876 patent. After considering the prior art and the Court’s original claim construction, the Patent Office rejected claim 1 as anticipated by the prior art. Ex. G, (‘876 Pros. Hist.) at 3-6. In an effort to overcome these rejections and distinguish the prior art, PI argued that the preamble was a limitation that required the reduction of electromagnetic interference or “EMI.” Ex. H, (‘876 Pros. Hist.) at 18.

The Patent Office “fully considered” this argument but deemed it “not persuasive” because the claims did not require EMI reduction:

It is noted that the feature upon which the Patent Owner relies (i.e., EMI in a power supply) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *See In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Ex. I, (‘876 Pros. Hist.) at 7. Specifically, the PTO held that the preamble was not a limitation:

The recitations “a power supply” in claim 1 and “a power conversion system” in claim 17 have not been given patentable weight because the recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and

where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone.

*Id.* (citations omitted).

PI did not dispute the Examiner's determination that the preamble was not a limitation. To the contrary, PI sought to amend its claims to incorporate elements from the preamble into the body of the claims. Were the preamble a limitation, this amendment would have been unnecessary. PI admitted that this amendment was necessary because the claims would not otherwise include elements that only appeared in the preamble. "This clarifying amendment is proposed so that proper antecedent basis is provided for the switching frequency of the power supply."<sup>8</sup> Ex. K, ('876 Pros. Hist.) at 11.

Based on this prosecution history – which did not exist at the earlier claim construction – one of ordinary skill would conclude that the preamble was not a limitation. Wei Decl. ¶ 19.

**b. The '876 invention does not require EMI reduction.**

Ignoring this new evidence, PI continues to argue that the preamble requires reducing EMI. During reexamination, however, the PTO held that "the particular problem with which the Patentee was concerned" was "varying the switching frequency in PWM regulator[s]" and not necessarily reducing EMI. Ex. I ('876 Pros. Hist.) at 7. This is consistent with the other claims of the '876 Patent, which require varying the switching frequency but make no mention of EMI reduction. *See, e.g.*, Ex. F, '876 Pat., Claims 11, 17, and 31.

The PTO's determination that the '876 patent was concerned with the "particular problem" of "varying the switching frequency in PWM regulator[s]" is consistent with the express definition that the patentee gave for the term "frequency jittering":

**Varying the frequency** of operation of the pulse width modulated switch by varying the oscillation frequency of the oscillator **is referred to as frequency jitter.**

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<sup>8</sup> When the Patent Office initially rejected the amendment as untimely, PI argued that because the Patent Office had not indicated that the preamble was not a limitation before the December 3, 2008 Office Action, "the patent owner was unable to recognize the potential benefit of amending the claims as proposed until after receiving the final Office action." Ex. J ('876 Pros. Hist.) at 2.

Ex. E, ‘851 Pat., 3:28-30.<sup>9</sup> Having acted as their own lexicographer, PI cannot now argue that it requires reduction of EMI. *Phillips*, 415 F.3d at 1316 (Where the specification reveals that the patentee has given “a special definition []to a claim term... that differs from the meaning it would otherwise possess... the inventor’s lexicography governs.”). Thus, one of ordinary skill would understand that were the preamble a limitation, “frequency jittering” means “varying the switching of the switch mode power supply.” Wei Decl. ¶¶ 20-21.

## 2. ‘876 Patent, Claim 1: “Digital To Analog Converter”.

The term “digital to analog converter” (“DAC”) appears in claim 1 of the ‘876 patent,<sup>10</sup> which was asserted in the *Fairchild I* litigation. Pursuant to the Court’s schedule in that case, on August 22, 2005 PI proposed a construction:

A digital to analog converter is a device that converts a digital input signal to an essentially proportional analog signal.

Ex. M. This was virtually identical to the construction simultaneously proposed by Fairchild, which also required that a digital signal be converted into an “essentially proportional” analog signal.<sup>11</sup> Thus, there was no dispute over the meaning of this term and it was not submitted to the Court for construction in *Fairchild I*.

PI has now abandons its previous construction in favor of a broader and unsupported one. There has been no change in the evidence to justify PI’s sudden about face – the specification, prosecution history, and claim language remain the same.<sup>12</sup> The only thing that has changed are

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<sup>9</sup> Since the ‘851 Patent was incorporated by reference into the ‘876 Patent (Ex. F, ‘876 Pat., 6:6-12), this unambiguous definition of “frequency jitter” is part of the intrinsic evidence. *Telemac Cellular v. Topp Telecom*, 247 F.3d 1316, 1329 (Fed. Cir. 2001) (“When a document is ‘incorporated by reference’ into a host document, such as a patent, the referenced document becomes effectively part of the host document as if it were explicitly contained therein.”).

<sup>10</sup> During reexamination, PI has amended claim 1 and the PTO has rejected the amended claim. Ex. L. Thus, the Court should decline to issue an advisory opinion on what this term may mean were the PTO to withdraw its rejection and an amended claim survive reexamination.

<sup>11</sup> Fairchild proposed that a “digital to analog converter” is “a converter in which digital input signals are changed to essentially proportional analog signals.” Ex. N.

<sup>12</sup> To date, PI has not amended or commented on this element during reexamination in a way that would contradict the construction it proposed in *Fairchild I*.

the accused product. PI improperly seeks to expand its proposed construction in a futile effort to capture these non-infringing devices.

| Fairchild 's Construction   | PI's Construction   |
|---|---|
| A device that converts a digital input signal to an essentially proportional analog signal. | A device that converts a digital input into an analog output. |

The intrinsic evidence is consistent with PI's original construction (adopted verbatim by Fairchild). For example, the specification describes "digital-to-analog (D-to-A) converter 150," which converts a digital input signal received from a counter to an analog signal provided to the control input of an oscillator. Ex. F, '876 Patent at 4:62-5:56 and Fig. 1. The specification also teaches that the analog signal output by the DAC is essentially proportional to the digital input signal. In other words, as the analog input signal increases, the digital output signal increases:

When D-to-A converter 150 is viewed as a plurality of current sources, the source of transistor 154 is connected to a jittering current source 152, which provides a current which is 1/200th of the current I generated by the current source 122. The source of MOSFET transistor 158 is connected to a current source 156 which provides a current that is 1/100th of the current I. The source of the MOSFET transistor 162 is connected to a jittering current source 160 which provides a current that is 1/50th of I. Finally, the source of the MOSFET transistor 166 is connected to a jittering current source 164 which provides a current that is 1/25th of the current I. The current sources 152, 156, 160 and 164 are binary-weighted, that is, the current source 164 provides twice the current provided by the current source 160, the current source 160 provides twice the current supplied by the current source 156 and the current source 156 provides twice the current provided by the current source 152.

Ex. F, '876 Pat., 5:5-21; *see also*, 5:36-55. Thus, one of ordinary skill in the art would understand that the claimed "digital to analog converter" is "a device that converts a digital input into an analog output" – precisely as PI initially proposed. Wei Decl., ¶¶ 22-23.

The fact that contemporaneous technical dictionaries are consistent with PI's original construction is further evidence that its new, litigation-inspired construction is wrong:

- "A converter in which digital input signals are changed to *essentially proportional* analog signals." *McGraw-Hill Dictionary of Scientific and Technical Terms*, 3rd Ed., 1984. Ex. O.
- "A device, or group of devices, that converts a numerical input signal or code into an output signal *some characteristic of which is proportional* to the input." *The*

*IEEE Standard Dictionary of Electrical and Electronics Terms*, 1993.<sup>13</sup> Ex. Q.

This is consistent with how one of ordinary skill would understand this term. Wei Decl. ¶ 24.

There is absolutely no support and no principled reason for PI to change its proposed construction from the *Fairchild I* case. The claim is the same, the specification is the same, even PI's expert is the same. The only thing that has changed are the accused products. The fact that these products do not infringe under the parties' original construction is not sufficient reason for PI to change its proposed construction. Wei Decl. ¶ 25.

**3. '876 Patent, Claim 21: "Means coupled to the control input for varying the switching frequency...."**

The parties agree that claim 21 includes a means-plus-function element in which the claimed function is "varying the switching frequency of the oscillator." [D.I. 109, p. 14-18]. The dispute concerns the structures needed to perform that function.

**a. The intrinsic evidence requires that the counter is part of the means-plus-function element.**

The intrinsic evidence shows that the relevant structures are the current sources and the counter. PI, however, seeks to take advantage of a printing error in its own patent to rewrite the claim and exclude the counter from the means-plus-function element. This should be rejected.

**(1) The claims prove that the counter is part of the means-plus-function element.**

As an initial matter, the plain language of claim 21 requires that the counter be part of the means-plus-function element. First, the claim is expressly written such that the required means "includes" two things – (i) "one or more current sources coupled to the control input" and (ii) "a counter coupled to the output of the oscillator and to the one or more current sources." Had only one structure been required, the claim would have so indicated, rather than specifically state that the means includes" a list of two structures.

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<sup>13</sup> During *Fairchild I*, PI cited this dictionary as evidence supporting its proposed claim construction and should be estopped from denying its relevance now. Ex. P (PI's 2/23/05 Response to Fairchild's First Set of Interrogatories) at Ex. A.

Claim 21 uses the word “and” to indicate that there are two elements – the oscillator “and” the means (which, in turn, includes the current sources “and” the counter). One of ordinary skill would understand that, had the patentee intended to claim three elements (the oscillator; the means; and the counter), he would have separated each item with a semicolon and used the word “and” before the final element, as in claims 1, 11, 17, and 31. Wei Decl., ¶ 29.

**(2) The specification proves that the counter is part of the means-plus-function element.**

The specification confirms that the means includes both the current sources and the counter. Wei Decl. ¶ 31. “The means for varying the frequency may include one or more current sources connected to the control input; and a counter connected to the output of the oscillator and to the one or more current sources.” Ex. F, ‘876 Pat., 2:63-66 (emphasis added). More importantly, the specification makes clear that it is only through the combination of the current sources and counter that the claimed function (varying the switching frequency of the oscillator) is achieved. “In this manner, counter 140 drives a plurality of current sources to inject additional current to the main current source 122 such that the frequency of the primary oscillator 110 is varied.” *Id.*, 5:52-56. Without the counter, the disclosed current sources would be unable to vary the switching frequency. Figure 2 of the ‘876 patent further illustrates the causal relation between the counter and the variation of the oscillator frequency.

**(3) The prosecution history proves that the counter is part of the means-plus-function element.**

Despite this intrinsic evidence, PI insists that the counter is not part of the claimed means. PI bases its entire construction on a formatting error in the printed ‘876 patent that PI has failed to correct. Specifically, claim 21 is indented in such a way that it could suggest that it includes three elements – an oscillator, the “means” and a counter. The prosecution history reveals that this apparent contradiction was simply a mistake made in the printing of the patent.

In the original application, claim 21 included two elements – an oscillator and a means. Ex. R at FCS0000043. It did not include any structure for the means and, in particular, did not refer to a counter. *Id.* Original claim 22 depended from claim 21 and included these limitations:

22. The circuit of claim 21 wherein the means for varying the frequency further comprises:

one or more current sources coupled to the control input; and  
a counter coupled to the output of the oscillator and to the one or more current sources.

*Id* at FCS0000043-44. Thus, original claim 22 makes clear that the “means for varying the frequency” in claim 21 included both the current sources and the counter.

During prosecution, Claim 21 was rejected during prosecution as anticipated by the prior art. Ex. S at FCS0000080. The PTO indicated, however, that dependant claim 22 “would be allowable if re-written in independent form including all of the limitation of the base claim and any intervening claim.” *Id.* at FCS0000081. Thus, PI amended claim 21 to include the limitations of claim 22. Ex. T at FCS0000096. PI rewrote the amended claim, properly formatted to indicate that the counter was part of the claimed means (PI underlined the text copied from claim 22 to claim 21):

**21. (Amended) A frequency jittering circuit for varying a power supply switching frequency, comprising:**  
**an oscillator for generating a signal having a switching frequency, the oscillator having a control input for varying the switching frequency; and**  
**means coupled to the control input for varying the switching frequency, including:**  
**one or more current sources coupled to the control input; and**  
**a counter coupled to the output of the oscillator and to the one or more current sources.**

*Id.* at FCS0000091-92. The amended claim was then allowed. Ex. U at FCS0000100. When the patent was printed, however, an error was introduced in the formatting such that the indentation of the counter portion of the means element was eliminated. Ex. F, ‘876 Pat., Claim 21. One of ordinary skill in the art would not have been confused by this error. Wei Decl., ¶¶ 32-33.

**b. The corresponding structures are disclosed in the specification.**

The parties agree that the structure corresponding to the “one or more current sources” portion of the means element is a digital to analog converter (“DAC”). [D.I. 109, p. 14-18].

Thus, the only issue is what DAC structures are disclosed in the specification of the '876 patent. *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1379 (Fed. Cir. 2001) ("The specification must be read as a whole to determine the structure capable of performing the claimed function."). The only such structure is D-to-A converter 150, which includes four binary weighted current sources controlled by four transistors:

**When D-to-A converter 150 is viewed as a plurality of current sources**, the source of transistor 154 is connected to a jittering current source 152, which provides a current which is 1/200th of the current I generated by the current source 122. The source of MOSFET transistor 158 is connected to a current source 156 which provides a current that is 1/100th of the current I. The source of the MOSFET transistor 162 is connected to a jittering current source 160 which provides a current that is 1/50th of I. Finally, the source of the MOSFET transistor 166 is connected to a jittering current source 164 which provides a current that is 1/25th of the current I. The current sources 152, 156, 160 and 164 are binary-weighted, that is, the current source 164 provides twice the current provided by the current source 160, the current source 160 provides twice the current supplied by the current source 156 and the current source 156 provides twice the current provided by the current source 152.

Ex. F, '876 Pat., 5:5-21 (emphasis added); *see also*, 5:36-55. This structure is illustrated in Figure 1 of the '876 Patent, which shows the four binary weighted current sources and the transistors as part of "D/A CONVERTER 150". Wei Decl. ¶ 34.

PI agrees that the structure "is a DAC with one or more current sources coupled to the oscillator control input" but argues that the current sources need not be binary weighted. The '876 patent does not describe any structure that would meet this limitation other than the DAC with binary weighted current sources. Wei Decl. ¶ 30. PI cannot expand its claim to encompass unclaimed and undisclosed structures. *Blackboard, Inc. v. Desire2Learn, Inc.*, No. 2008-1368, 2009 WL 2215107, at \*14 (Fed. Cir. July 27, 2009) ("That ordinarily skilled artisans could carry out the recited function in a variety of ways is precisely why claims written in 'means-plus-function' form must disclose the particular structure that is used to perform the recited function."); *Aristocrat Techn. Australia Pty Ltd. v. Int'l Game Techn.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) ("The point of the requirement that the patentee disclose particular structure in the specification and that the scope of the patent claims be limited to that structure and its equivalents is to avoid pure functional claiming.").



The structure corresponding to the “counter” portion of the means element is a “7-Bit Counter” in which the four most significant bits are connected to the DAC. Such a “7-Bit Counter” is illustrated in Figures 1 and 6 of the ‘876 patent and described in the specification.

Counter 140 has a plurality of outputs Q1-Q3 (not shown) which are not used. The remaining outputs Q4-Q7 are connected to a digital-to-analog (D-to-A) converter 150, which may be implemented as a series of frequency jittering voltage sources or current sources.

Ex. F, ‘876 Pat., 4:62-66. PI argues that the counter should not be limited the “7-Bit Counter” described in the specification. The ‘876 Patent, however, does not describe any corresponding structure other than the “7-Bit Counter”. Wei Decl. ¶¶ 34-35.

### **C. U.S. Patent No. 6,107,851**

In *Fairchild I*, the Court determined that based on the evidence available at that time “the term ‘frequency variation signal’ means ‘an internal signal that cyclically varies in magnitude during a fixed period of time and is used to modulate the frequency of the oscillation signal within a predetermined frequency range.’” [*Fairchild I*, D.I. 232, ¶ 16]. Since then, there has been additional prosecution history in the pending reexamination that must be considered. This new intrinsic evidence – including tacit admissions by PI – contradicts the earlier claim construction and requires a new construction of this term as “a signal that causes the frequency of the oscillation signal to vary.” Wei Decl. ¶ 36.

#### **1. ‘851 Patent, Claim 11: “Frequency Variation Signal”.<sup>14</sup>**

The PTO began to reexamine the ‘851 patent after the construction in *Fairchild I*. Thus, the Court could not consider this new prosecution history in construing the term. The reexamination prosecution history expressly rejects PI’s arguments that the “frequency variation signal” must be internal or cause the oscillation signal to vary within a frequency range. For example, during reexamination prosecution, PI argued that the claimed “frequency variation signal” must be an internal frequency variation signal. The Patent Office rejected this argument:

<sup>14</sup> During reexamination, PI cancelled claim 11. Ex. V at 4. Indeed, PI has amended each instance of “frequency variation signal” in the pending claims and the PTO has rejected the amended claims. Ex. W. Thus, the Court should decline to construe this term.

At third, it is noted that the feature upon which the Patent Owner relies (i.e., internal frequency variation signal) is not recited in the rejected claim(s).

Ex X ('851 Pros. Hist.) at 10. PI also sought to distinguish the prior art during reexamination by arguing that the claimed "frequency variation signal" must modulate the frequency of the oscillation signal within a predetermined frequency range rather than between two distinct frequencies. The PTO also rejected this argument:

However, the exemplary claim 1 never limits said oscillation signal varying within a frequency range, which is changing among more than two distinct frequencies.

*Id.* at 13. Reviewing this prosecution history, one of ordinary skill would not read these limitations into the claim. Wei Decl. ¶ 37.

Faced with these rejections, PI proposed amending claim 11 to add additional limitations from the Court's prior claim construction. Ex. Y ('851 Pros. Hist.) at Attachment ("a frequency variation circuit that provides a frequency variation signal, wherein the frequency variation signal is an internally controlled signal that cyclically varies in magnitude during a fixed period of time and is used to modulate a frequency of an oscillation signal within a predetermined frequency range...."). This proposed amendment is an admission that the newly added language (underlined by PI, above) was not present in the original claim. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 734 (2002) ("A rejection indicates that the patent examiner does not believe the original claim could be patented. While the patentee has the right to appeal, his decision to forgo an appeal and submit an amended claim is taken as a concession that the invention as patented does not reach as far as the original claim.").

Rather than officially submit this proposed construction, PI amended claim 11 to add the limitation "wherein the frequency variation signal is an internally controlled signal within the regulation circuit." Ex. Z ('851 Pros. Hist.) at 5. Before the PTO could consider this amendment, PI cancelled claim 11. Ex. T ('851 Pros. Hist.) at 4 ("Claim 11 (cancelled)"]).

Thus, the reexamination has created significant new intrinsic evidence as to the construction of "frequency variation signal". First, the PTO confirmed that the limitations from the Court's construction are not present in the original claim. Next, PI amended the claims in an

effort to distinguish the prior art by adding of these missing limitations. Finally, PI cancelled claim 11. After reviewing this intrinsic evidence, one of ordinary skill would understand that the original claim should not be given the Court's prior construction. Wei Decl. ¶¶ 36-37.

**2. Fairchild's Proposed Construction Is Consistent With The Claim Language, Specification, And Original Prosecution History.**

In light of this new prosecution history, "frequency variation signal" should be given its ordinary meaning – "a signal used to vary the frequency of the oscillation signal." Wei Decl. ¶ 38. This is consistent with the claim language, specification, and original prosecution history.

The plain language of claim 11 does not require that the frequency variation signal be internal or cyclic or cause the oscillator to vary in a predetermined range. Ex. E, '851 Pat., Claim 11. The claim merely requires that the "frequency variation signal" is provided by the "frequency variation circuit" and that the oscillator signal "var[ies] within said frequency range according to said frequency variation signal." *Id.* Thus, properly construed, the "frequency variation signal" is simply a signal used to vary the frequency of the oscillation signal.

The specification and original prosecution history confirms this construction. The specification describes a prior art frequency variation signal (jitter current 135) that is not necessarily cyclic. "The jitter current 135 is used to vary the frequency of the saw-toothed waveform generated by the oscillator contained in pulse width modulated switch 90." *Id.*, 3:14-17. Despite this, during the original prosecution, the Examiner specifically held (and PI did not dispute) that external resistor (140) – which generates external frequency variation signal (135) – was the claimed "frequency variation circuit" and, thus, generates the claimed frequency variation signal. Ex. AA, ('851 Pros. Hist.) at FCS0000439. During reexamination, the PTO continues to find that this jitter current anticipates the frequency variation signal element. *See, e.g.*, Ex. BB ('851 Pros. Hist.) at 3-5, 8-10, 13-14, 17-18; Ex. CC ('851 Pros. Hist.) at 4-8, 11.

**V. CONCLUSION.**

For the foregoing reasons, Defendants and Counterclaimants respectfully request the Court to construe the terms as set forth, above.

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